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PATENT SPECIFICATION

(11) 1 519 066

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(54) A STORAGE CABINET

(71) We, OFFICE TYPEWRITER COMPANY LIMITED, a New Zealand Company, of 3 Eglon Street, Parnell, Auckland, New Zealand, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to a storage cabinet which may be used for a variety of purposes. In the past storage cabinets for storing, for example, files have usually been rectangular in plan and have been provided with hinged doors. Such doors when open require that an appreciable area of floor space be kept free. It is also difficult to provide a cheap cabinet which is sufficiently rigid to support such a hinged door without recourse to costly constructions. It was an object of the present invention to provide a storage cabinet which was strong and yet relatively cheap to manufacture.

The present invention achieves this by providing a cabinet with a door which is unlike conventional sliding doors in other applications which would have a top and bottom track. The door of the storage cabinet according to this invention is fastened to upper and lower turntables which are rotatable about a central upright axis.

According to the present invention, there is provided a storage cabinet comprising a base, one or more side panels of arcuate cross section upstanding from the base around a circular periphery, a top surmounting the one or more side panels, said one or more side panels defining and partially surrounding a cylindrical enclosure and providing an opening thereto, a continuous upright column vertically supported between the centre of the base and the top, a lower circular turntable concentrically rotatable about said column within the confines of the one or more side panels and above but adjacent the

base, an upper circular turntable concentrically rotatable about said column within the confines of the one or more side panels and below but adjacent the top, a door panel of arcuate cross section fastened to the upper and lower turntables within said enclosure and bearing means supporting the upper or lower turntable or both, for rotation about said column, the construction and arrangement being such that when the upper or lower turntables are rotated about said column the door panel opens or closes said opening giving access to the enclosure; and lower turntable forming a shelf.

The present invention will now be described with reference to the accompanying drawings in which:-

Figure 1 shows on the left hand side an elevation of a storage cabinet according to the preferred form of this invention with the door open while on the right hand side there is shown the elevation with the door shut,

Figure 2 is a cross-section on the plane II-II of Figure 1 the left and right halves showing the door open and closed respectively, and where the same numbers are used to indicate the same features on both halves, with the numbers on the right half having a' added, and

Figure 3 shows a longitudinal but fragmentary cross-section in the plane III-III indicated in Figure 2, with the doors open.

It will be convenient to refer firstly to Figure 3. There, as can be seen, an inverted dished base 1 has a peripheral flange 2 which may serve as a foot for the cabinet or as shown castors 3 may be provided. The castors are mounted on diametrical strips of metal welded in position underneath the base dish 1 the arm 4 being at right angles to a similar arm which does not show in the drawings. Welded to the intersection of these arms is a stub pipe 5 the top of which is supported in an aperture centrally provided in the inverted base dish 1 and which may be

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welded thereto as desired. An upright central column 6 is a sliding fit within the stub pipe 5 and is secured thereto by means of lock bolts 7. Such an arrangement in combination with other features which will be mentioned mean that the whole dismantled cabinet can be stored for transport or while awaiting sale in a relatively small space and can be erected only when required by the customer for use. The base also comprises an inverted tray 9 which is domed at 10 and bolted at 11 to the domed part of the base and which has a downwardly turned peripheral flange 12.

A top 13 which has a downwardly turned peripheral flange 14 is strengthened by means of four mutually perpendicular radial arms 15 on its undersurface and welded to its centre is a downwardly projecting stub pipe 16 fitted with a spacing washer 17. The stub pipe 16 is adapted to plug into the head of the central supporting pipe 6 which thus supports the centre of the top at least. To the peripheral flange 14 of the top 13 there is secured at least one side panel 19 and preferably two as shown in the drawings since this provides optimum strength and accessibility to the enclosure defined by the side panels.

The side panel 19 is provided with a double flange at the edges 38 and 39 (Figure 2) and is bolted or blind riveted inside the flange 14 of the top 13 and outside the flange 12 of the base portion 9.

In the preferred construction then as detailed in Figure 3, upper and lower turntables, 20 and 21 respectively, are provided each of which has a circular peripheral flange 22 and 23 respectively. The upper turntable 20 is supported in a manner which ensures that it rotates in a horizontal plane. Thus there is an upper bearing race 24 and a lower bearing race 25 each of which engage with suitable recesses provided in a two-piece support the parts of which are spot welded to each other and to the turntable 20. Thus an upper flanged part 26, which is spot welded to the undersurface of the upper turntable 20, engages at its centre where it surrounds the column 6 with the upper bearing 24 and a lower substantially conical portion 27 engages with the bearing 25 where it too surrounds the column 6. Upper and lower collars 29 and 30 are screwed onto the column 6 to provide the necessary opposite members for the bearing races 24 and 25 to act against. Thus the upper turntable is securely supported for rotation about the column 6.

To the flange 22 of the upper turntable 20 there is fastened by bolting or blind riveting the one or more door panels 31. The edges of panels 31 are inwardly flanged at 32 and 33 in the same manner as the side panels 19 and the lower portion of each door 31 is

bolted or blind riveted to the flange 23 of the lower turntable 21. In such a construction the central portion of the lower turntable 21 may merely be provided with a suitable aperture to clear the stub pipe 5 and may be spaced by means of a fibre washer 34 from the base dish 1. However, it will be apparent that a more robust bearing could be provided at this point and in fact it would be possible to support the upper turntable from the lower turntable via the doors 31 by providing suitable bearing means at the lower turntable.

Although not shown, a number of shelves can be supported at intervals up the column 6 in a manner similar to the upper turntable 20. Such shelves would simply comprise such an inverted upper turntable of slightly lesser radius but otherwise provided with the same bearing system if such shelves are required to be rotatable about the column.

It will be appreciated that with suitable bearings a fairly small gap only, perhaps of the order of 6 mm, is necessary between the side panels 19 and the doors 31 and between the lower turntable 21 and the base of the tray 9. Thus, a substantially fireproof construction is possible. Furthermore the curved or arcuate cross sections of the doors and side panels give them great strength especially when coupled with the flanges 38, 39, 32 and 33.

It is even possible to lock the doors such as by lock 35 (Figure 1) where a key when inserted could cause a parrot's beak type locking arm to rotate through a gap in the flange 39' (obscured in the drawing by the handle 36') and into a corresponding gap 37 (Figure 1) in the flange 32 of door 31 there to engage a radially projecting pin (not shown) and thus preventing rotation of the door 31 about the axis of pipe 6.

A further feature of the present invention is that variation of the height of the cabinet can be achieved simply by substituting side panels, doors and centre column 6 of different heights so that there is versatility in this respect while stockists need carry fewer parts to be able to supply a complete range of cabinet heights.

WHAT WE CLAIM IS:-

1. A storage cabinet comprising a base, one or more side panels of arcuate cross section upstanding from the base around a circular periphery, a top surmounting the one or more side panels, said one or more side panels defining and partially surrounding a cylindrical enclosure and providing an opening thereto, a continuous upright column vertically supported between the centre of the base and the top, a lower circular turntable concentrically rotatable about said column within the confines of the one or more side panels and above but adjacent the base, an upper circular turntable concentrically

rotatable about said column within the confines of the one or more side panels and below but adjacent the top, a door panel of arcuate cross section fastened to the upper and lower turntables within said enclosure and bearing means supporting the upper or lower turntable or both, for rotation about said column, the construction and arrangement being such that when the upper or lower turntables are rotated about said column the door panel opens or closes said opening giving access to the enclosure; said lower turntable forming a shelf.

2. A storage cabinet as claimed in claim 1 wherein there is an intermediate circular turntable concentrically rotatable about said continuous upright column within the confines of the one or more side panels and between said upper and lower turntables, and bearing means supporting said intermediate turntable, for rotation about said

column, said intermediate turntable forming a shelf and the latter said bearing means being adjustable on the column to alter the height of said intermediate shelf.

3. A storage cabinet as claimed in claim 1 wherein the top is circular.

4. A storage cabinet as claimed in any one of the preceding claims wherein there are two oppositely arranged side panels and two oppositely arranged door panels.

5. A storage cabinet as claimed in any one of the preceding claims wherein the upper turntable is supported on bearings and the lower turntable is suspended by the or each door from the upper turntable.

6. A storage cabinet substantially as herein described with reference to the accompanying drawings.

MARKS & CLERK,
For the Applicants.

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 Sheet 1

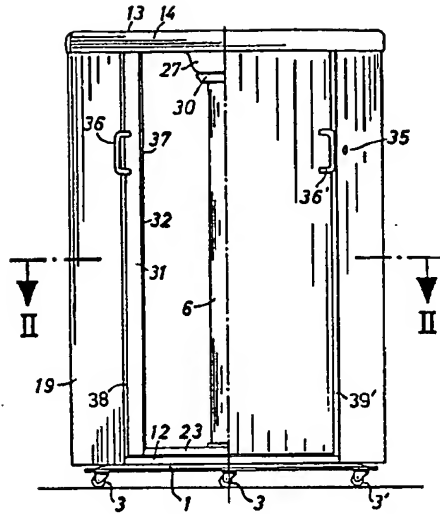


Fig 1

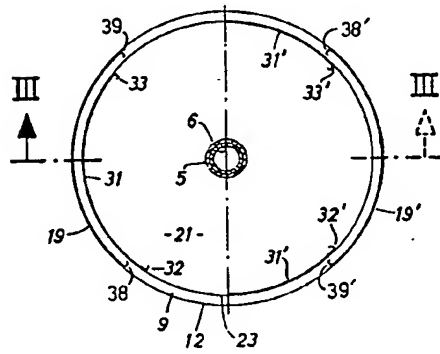
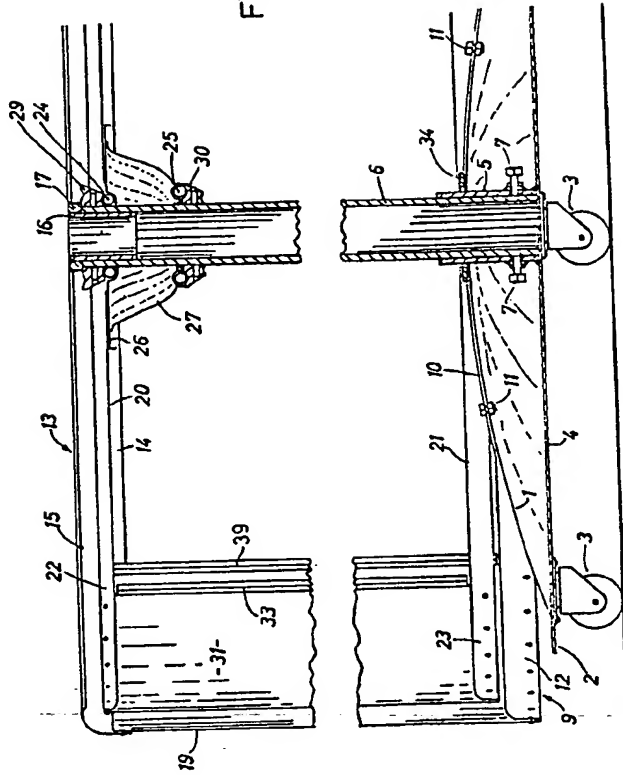


Fig 2

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COMPLETE SPECIFICATION
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Sheet 2

Fig 3



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INTERNATIONAL SEARCH REPORT

...formation on patent family members

Intel. Nat. Application No

PCT/IB 00/01135

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The
Patent
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Claims searched: 1-15

Examiner: R E Hardy
Date of search: 31 January 2000

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.R): A4B (B9B2)

Int Cl (Ed.7): A47B (49/00 55/00 61/00 81/00 87/00 95/00 96/00)

Other: Online : EPODOC, WPI, JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB1519066 A OFFICE TYPEWRITER : See the Figures	1-4,9
X	GB0693446 A WOOLF : See the Figures	1-5,9
X	WO94/17499 A1 SA L.P.E. : Whole document	1-7,9,10
X	WO88/01143 A1 SECRETARIAT D'ETAT : See the Figures <i>US Equivalent : US 5,039,179 (see int search report)</i>	1-4,6,7,9,10
X	US5651219 A BALOGA : See the Figures	1-4,10
X	US5172969 A WESTINGHOUSE : See the Figures	1-5,9
X	US5135293 A SIGOUIN : See the Figures and col.5 line 30 onwards	1-4,6,7,9,10
X	US4783132 A BAUS : See the Figures	1-5,9
X	PAJ Abstract No JP4292108 & JP040292108A (MATSUSHITA) - See Abstract and Figures	1-5

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E Patent document published on or after, but with priority date earlier than, the filing date of this application.

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